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(54) Title: METHOD FOR THE QUANTIFICATION OF IN VIVO NUCLEIC ACID LEVELS

(57) Abstract: The invention in particular relates to a method for the quantification of *in vivo* RNA from a biological sample comprising the steps of: collecting said biological sample in a tube comprising a compound inhibiting RNA degradation and/or gene induction; forming a precipitate comprising nucleic acids; separating said precipitate from the supernatant; dissolving said precipitate using a buffer, forming a suspension; isolating nucleic acids from said suspension using an automated device; dispersing/distributing a reagent mix for RT-PCR using an automated device; dispersing/distributing the isolated nucleic acids within the dispersed reagent mix using an automated device, and determining the *in vivo* levels of transcripts using the nucleic acid/RT-PCR reagent mix in an automated setup. The present invention also relates to the quantitativation of DNA from a biological sample. The present invention further elucidates a kit for isolating quantifiable nucleic acids from a biological sample. Applications of the method according to present invention are also disclosed.